



PATENT
Attorney Docket No. 205701

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

IGARASHI et al.

Application No. 09/669,426

Filed: September 25, 2000

For: **METHOD FOR PRODUCING
HYDROCYANIC ACID
SYNTHESIS**

Art Unit: 1754

Examiner: Cam N. Nguyen

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**AMENDMENTS TO CLAIMS MADE IN
RESPONSE TO OFFICE ACTION DATED MARCH 14, 2002**

Please make the following amendments to claim 1:

1. (Amended) A method for producing a hydrocyanic acid synthesis catalyst which comprises selecting an iron source and form for the hydrocyanic acid synthesis catalyst and having a surface and sequentially exposing the [characterized by sequential exposure of an] iron surface to oxidative and reductive atmospheres.

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**PENDING CLAIMS AFTER AMENDMENTS
MADE IN RESPONSE TO OFFICE ACTION DATED MARCH 14, 2002**

1. A method for producing a hydrocyanic acid synthesis catalyst which comprises selecting an iron source and form for the hydrocyanic acid synthesis catalyst and having a surface and sequentially exposing the iron surface to oxidative and reductive atmospheres.
2. A method for producing hydrocyanic acid synthesis catalyst according to claim 1 wherein the inner surface of an iron pipe is sequentially exposed to oxidative and reductive atmospheres.
3. A method for producing hydrocyanic acid synthesis catalyst according to claim 1 or claim 2 wherein the cycle of exposure to oxidative and reductive atmospheres is carried out more than once.
4. The method of claim 1 wherein the oxidative atmosphere is a gas containing from about 5% to 30% by volume of oxygen.

5. The method of claim 1 wherein the reductive atmosphere is a gas containing between 1% and 99% by volume of hydrogen.
6. The method of claim 1 wherein the oxidative atmosphere is a gas containing from about 5% to 30% by volume of oxygen and the reductive atmosphere is a gas containing between 1% and 99% by volume of hydrogen.
7. The method of claim 1 wherein the exposure of the iron surface to the oxidative atmosphere is conducted under the conditions that the temperature is in the range of about 300°C to 650°C, the pressure is in the range of from about 6 kPa to 150 kPa, a space velocity of from about 10 to 150h⁻¹ and the time is from about 5 to 300 minutes.
8. The method of claim 1 wherein the exposure of the iron surface to the reductive atmosphere is conducted under the conditions that the temperature is in the range of about 300°C to 650°C, the pressure is in the range of from about 6 kPa to 150 kPa, a space velocity of from about 10 to 150h⁻¹ and the time is from about 5 to 300 minutes.
9. The method of claim 1 wherein the exposure of the iron surface to the oxidative and reductive atmospheres is conducted under the conditions that the temperature is in the range of about 300°C to 650°C, the pressure is in the range of from about 6 kPa to 150 kPa, a space velocity of from about 10 to 150h⁻¹ and the time is from about 5 to 300 minutes.
10. A hydrocyanic acid synthesis catalyst characterized by the presence of a surface having an oxide layer that has been prepared by sequential exposure of an iron surface to oxidative and reductive atmospheres.